

## **QA26 – Infant Feeding Problems: Allergies, Refusing Nipple & Swallowing Problems**

### **QUESTION:**

An 8 month old infant who is blind was referred for an initial nutrition assessment. History: The infant consumed Enfamil; no problems with suck or swallow and no problems with elimination were reported. The infant was growing at the 50<sup>th</sup>ile for weight and length. At about 7 months of age the infant developed some gag reflex and was changed to Isomil because of allergies (undocumented in record). Because of concerns about 'growth faltering', the infant's formula was changed to 1 cup Isomil powder,  $\frac{3}{4}$  cup + 2  $\frac{1}{2}$  Tbsp. polycose with water to make 24 ounces. In the three weeks since this change, the infant has refused to nipple the formula from a bottle so mom is feeding her with a syringe. She consumes about 10-12 oz of the formula mixture/day. The infant has developed problems with constipation; difficult elimination of stool 2x/week. The infant is at the 25-50<sup>th</sup>ile for weight and for length. By my calculations, the 'batch' of formula is about 840 kcals and about 35 kcals/oz. Her intake is 350-420 kcals/day (no extra water).

The infant has been referred for swallowing studies. Today her formula (at my recommendation) was changed to 24 kcal/oz using Isomil only, re-introduction of the bottle, and extra water after each bottle feeding.

What is the thinking behind a 35 kcal/oz formula concentration? What is the long-term impact of water deprivation for 3-4 weeks on renal function? What effects might we watch for related to disrupted feeding cues because of the syringe feeding? What 'stimulation exercises' related to oral motor patterning and 'sensory awareness' should we be offering to this infant who is blind? Any clues I have missed in my assessment that might suggest that the concentrated formula intervention was the 'thing to do'?

### **ANSWER:**

1. What is the thinking behind a 35 kcal/oz formula concentration?

Concentrated formula may be used in situations where the infant is unable to meet energy needs on a 20 kcal/oz formula. This may be the case where energy needs are high, or the infant has feeding difficulties. Infant should, however be taking in enough formula to meet fluid needs prior to concentrating formula. In this case, it is unclear whether the infant was unable to meet energy needs, or why? If necessary, formula may be concentrated (i.e. the addition of less water) to 24 kcal/oz; then the addition of modular components may increase caloric density further. Again, the need for such high caloric density in this case is unclear and the addition of modular components may potentially subject the infant to intolerance and/or malabsorption.

2. What is the long-term impact on renal function of water deprivation for 3-4 weeks?

An infant presenting with inadequate fluid and/or high renal solute load would most likely show clinical evidence of renal compromise if unable to handle the load (decreased urine output, alteration in electrolytes, signs of dehydration etc). In the absence of such evidence it is unclear what the impact might be.

3. What effects might we watch for related to disrupted feeding cues because of the syringe feeding?

A feeding observation usually includes behavioral observations of distress, aversion, ability to give cues of hunger and satiety as well as looking at the actual nipping process (time, choking, seal, etc).

4. What 'stimulation exercises' related to oral motor patterning and 'sensory awareness' should we be offering to this infant who is blind?

Centers who work with sensory impaired infants may have more information on specific exercises. In feeding such infants, however, one needs to consider giving consistent verbal/touch/position cues to the infants that provide an association with feeding (i.e. the infant needs to know that food is about to be presented) as well as receiving some positive feedback related to the feeding process itself.

5. Any clues I have missed in my assessment that might suggest that the concentrated formula intervention was the 'thing to do'?

Comment: A complete assessment might include identifying that a growth problem exists (i.e. failure to gain at an inadequate rate) and then if there is a problem assessing the cause (i.e. is intake inadequate, if so, why?). In the absence of such information it would be difficult to develop an appropriate intervention and not disrupt the feeding relationship.